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10/596,847	06/27/2006	Jasko Musaeffendic	AP099-06	1292

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EXAMINER
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STEELE, JENNIFER A

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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11/12/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,847	<b>Applicant(s)</b> MUSAEFENDIC, JASKO	
	<b>Examiner</b> JENNIFER STEELE	<b>Art Unit</b> 1794	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 61-80 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 61-80 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

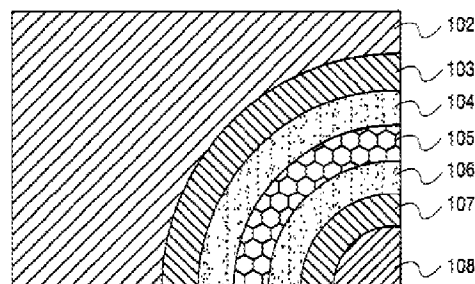
A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. **Claim 61-71, 74-80 rejected under 35 U.S.C. 102(b) as being anticipated by Neal (US 6,703,104).**
2. Claim 61 recites a laminate system comprising:
  - a. A first outer layer
  - b. A second outer layer
  - c. At least two plies placed between the first and second outer layers:
  - d. At least one dissipating element between said inner plies
  - e. A polymer matrix in between said first and second layers, and said first and second plies.
3. Neal teaches a panel configuration composite armor (Title). Neal teaches combining ballistic and fragment resistant fabrics in multiple layers with a central geometrically shaped composite core in a resin which forms a composite panel (ABST). Neal teaches composite panel is designed to withstand impact and can elastically deform to absorb and attenuate energy of a forced attack (ABST). As shown in Fig. 1 below, Neal teaches first and second outer layers, **102** and **108** and at least two inner

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plies placed between the outer layers. The inner plies of Neal are layers **103**, **104**, **106** and **107** (col. 6, 7 and 8 describe the layers). Neal teaches a geometric core layer **105** between the inner plies that provides strength and flexibility and is capable of flexing to allow the distribution and dissipation of energy of the attack by a sharp or blunt object (col. 7, lines 17-41). The geometric core of Neal is equated with a dissipating element between the inner plies. Neal teaches the layers are suffused with a resin and this structure is equated with a polymer matrix in between the first and second layers and the first and second plies.

**FIG. 1**

Regarding claim 62, Neal teaches additional layers, such as layer **104** and **106** in addition to inner layers **103** and **107**.

As to claim 63, Neal teaches the inner layers **103**, **104**, **106** and **107** are fibrous fabrics that are woven (col. 6, lines 58-60) or of aramid fiber in a binder (col. 7, lines 3-

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7) and these layers equated to reinforcement plies as their function is to provide strength to the composite. Fibrous mats are equated with reinforcement plies.

With regards to claim 64, Neal teaches inner layers **103** and **107** are comprised of two plies of e-glass fabric (col. 6, lines 46) and inner layers 104 and 106 are comprised of aramid fibers or aluminum or carbon materials (col. 7, lines 3-15).

Regarding claim 65, Neal teaches the core layer has a geometric configuration which can be in shapes of circles, squares, rectangles, pentagons and octagons (col. 7, lines 33-35). Neal teaches the geometric cells have a length which is the length of the tube and a diameter which is the diameter of the circular geometric shape (col. 7, lines 20-23). This structure is equated with the claimed dissipating element that is selected from a group consisting of tubular, spherical or corrugated sheet.

As to claim 66, Neal teaches the core geometric dissipating element can be made from aramid fiber paper or from aluminum or carbon materials (col. 7, lines 30-40).

With regards to claim 67, Neal teaches a core of geometric dissipating elements referred to as cells and teaches a plurality of cells. A plurality of cells is at least two dissipating ply elements. Neal teaches the cells are arranged to be closely packed and from the description and Fig. 1 the cells appear to be arranged symmetrically and balanced.

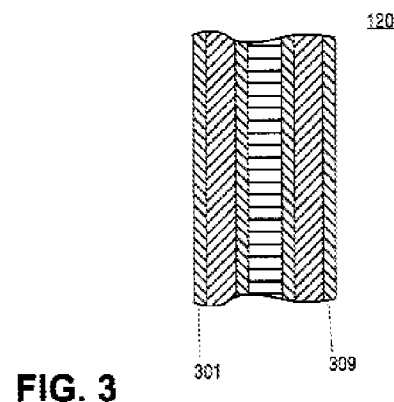
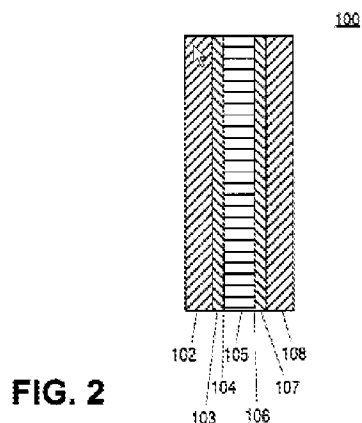
Regarding claim 68, Neal teaches the plies and geometric core material are suffused with a resin that can be a thermoset or a thermoplastic (col. 8, lines 15-21).

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Neal teaches resin types of phenolic (col. 8, lines 32) and phenolic vinyl esters (col. 11, lines 8).

With regards to claim 69, Neal teaches outer layers **102** and **108** are comprised of 8 plies of Kevlar fibers and teaches the layer can have a thermoset phenolic resin content (col. 15-40) and these materials are thermoplastics, plastics or polymers as claimed.

As to claim 70, Neal teaches additional layers **301** and **309** (shown in Fig. 3 below) can be applied on the outside of the composite armor panel and can be comprised of a single ply of fiberglass ballistic grade textile fabric and may have 35-44 % phenolic resin and may have a layer of gelcote applied to the surface (col. 9, lines 8-14). Fig. 2 represents the composite structure of Fig. 1 and Fig. 3 the composite structure with additional layers on the outer layer. A phenolic resin layer is a layer made from a material selected from the group consisting of plastic or polymer.



Regarding claim 71, Neal teaches a composite panel laminate that is designed to allow the geometric cells to dissipate a force or load within the structure and across the

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panel (col. 7, lines 37-40). This description by Neal wherein the force is dissipated across the panel is equated with Applicant's claim of redistributing the load in a longitudinal direction to the main axis of said reinforcement plies.

Regarding claim 74, Neal teaches the structure of a first outer layer, a second outer layer, at least two inner plies and at least two dissipating elements and in a polymer matrix as noted with respect to the rejection of claim 61.

Neal teaches an additional layer placed on an outer layer as noted with respect to claim 70.

Neal teaches that geometric cells that dissipate the energy from a force or load. Neal teaches the energy is dissipated across the panel and therefore teaches the energy is dissipated or redistributed in a longitudinal direction.

With respect to claim 75, Neal teaches the inner plies are comprised of e-glass that is woven.

With respect to claim 76, Neal teaches the dissipating cells are made from polymer fibers of aramid paper or can be made from aluminum or carbon materials.

With respect to claim 77, Neal teaches a phenolic resin.

With respect to claim 78, Neal teaches the outer layers **102** and **108** are comprised of polymer fibers such as Kevlar.

With respect to claim 79, Neal teaches the limitations of claim 79 as noted above.

Neal teaches a first and second outer layer of made from polymer fibers.

Neal teaches two inner plies made from woven e-glass fibers.

Neal teaches geometric cells that are dissipating elements and have a tubular or spherical structure.

Neal teaches a resin suffused throughout the layers and teaches the resin can be a phenolic resin.

Neal teaches an additional layer can be placed on one of the outer layers and that layer can be comprised of a polymer.

Neal teaches that geometric cells that dissipate the energy from a force or load. Neal teaches the energy is dissipated across the panel and therefore teaches the energy is dissipated or redistributed in a longitudinal direction.

Neal teaches the geometric cells are arranged in a symmetric, balanced and unidirectional configuration.

Regarding claim 80, Neal teaches plies and the geometric cells are arranged in a cross-ply orientation.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claim 72 and 73 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Neal (US 6,703,104).** Neal as



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discussed above teaches the composite panel has the property of being able to prevent a force from penetrating the layers and teaches testing methods and measurements such as the National Institute of Justice Level III-A and teaches one embodiment exceeds Level III-A (col. 11, lines 39-45). Neal also teaches American Society for Testing and Materials (ASTM 1233-93) and one embodiment exceeds class III sequence 16 (col. 11, lines 47-51). As to claim 72, Neal differs and does not teach the property of being able impact energy as measured in Joules and Neal does not teach the property of redirecting forces from about 50 to about 190 kN. As to claim 73, Neal differs and does not teach density of the composite panel. As Neal teaches the same structure and materials as the claimed invention it is reasonable to presume that these properties are inherent in the invention of Neal. When the reference discloses all the limitations of a claim except a property or function, and the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render obvious the claimed invention the examiner has basis for shifting the burden of proof to applicant as in *In re Fitzgerald*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). See MPEP § 2112- 2112.02

### ***Response to Arguments***

5. Applicant's arguments with respect to claim 61-80 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments with respect to Percy are persuasive and the previous rejection is withdrawn. As a result, this Office Action is being made Non-Final.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JENNIFER STEELE whose telephone number is (571)272-7115. The examiner can normally be reached on Office Hours Mon-Fri 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Tarazano can be reached on (571) 272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. S./  
Examiner, Art Unit 1794

/D. Lawrence Tarazano/  
Supervisory Patent Examiner, Art  
Unit 1794

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